

Amendments to the Claims: This listing of claims will replace all prior versions, and listings, of claims in the application

Listing of Claims:

1.-9. (Cancelled)

10. (Previously Presented) A display apparatus which makes one pixel displayable in four colors, that is, three primary colors and a white color, and inputs and displays chrominance signals corresponding to a mixing ratio of said four colors, comprising:

color correction instrument which performs a first color correction of increasing the saturation of said chrominance signals and a second color correction of increasing a white color component of said chrominance signals, when a predetermined color component exists in said chrominance signals corresponding to said pixel;

selection instrument which switches temporally a first chrominance signal obtained by said first color correction, and a second chrominance signal obtained by said second color correction, and selects either; and

display instrument which displays the chrominance signal, which is selected, in said pixel.

11. (Previously Presented) A display apparatus which makes one pixel displayable in four colors, that is, three primary colors and a white color, inputs chrominance signals corresponding to a mixing ratio of said four colors, and displays them without decreasing the number of colors, comprising:

color correction instrument which performs a first color correction of increasing saturation of said chrominance signals and a second color correction of increasing a white color component of said chrominance signals, when a predetermined color component exists in said chrominance signals corresponding to said pixel;

height generation instrument which gives, when there is a region where a plurality of pixels having said predetermined color component exist adjacently, at least height difference in saturation to said region by selecting either of said first chrominance signals and said second chrominance signals for every pixel of said region according to a predetermined pattern for

selecting said first chrominance signals obtained by said first color correction, and said second chrominance signals obtained by said second color correction in turn for every one pixel or a plurality of adjacent pixels; and

display instrument which displays said region where at least said height difference in saturation is given.

12. (Previously Presented) The display apparatus according to claim 10, wherein said predetermined color is yellow, magenta, or cyan.

13. (Previously Presented) The display apparatus according to claim 11, wherein said predetermined color is yellow, magenta, or cyan.

14. (Previously Presented) The display apparatus according to claim 10, wherein said three primary colors are red, green, and blue.

15. (Previously Presented) The display apparatus according to claim 11, wherein said three primary colors are red, green, and blue.

16. (Previously Presented) The display apparatus according to claim 10, wherein said chrominance signals are RGB signals.

17. (Previously Presented) The display apparatus according to claim 16, wherein,
when said predetermined color is yellow, said color correction instrument performs said first color correction by decreasing a value of a B signal of said chrominance signals and performs said second color correction by increasing a B signal of said chrominance signals, when a yellow color component exists in said chrominance signals corresponding to said pixel.

18. (Previously Presented) The display apparatus according to claim 11, wherein said chrominance signals are RGB signals.

19. (Previously Presented) The display apparatus according to claim 18, wherein,
when said predetermined color is yellow, said color correction instrument performs said first color correction by decreasing a value of a B signal of said chrominance

signals and performs said second color correction by increasing a B signal of said chrominance signals, when a yellow color component exists in said chrominance signals corresponding to said pixel.

20. (Previously Presented) The display apparatus according to claim 10 wherein said selection instrument switches temporally and selects either said first chrominance signal or said second chrominance signal using a signal of determining the timing when said display instrument performs display in said pixel.

21. (Previously Presented) The display apparatus according to claim 11, wherein said height generation instrument performs the selection of said first chrominance signals and said second chrominance signals using a signal of determining timing when said display instrument performs display in said pixel.

22. (Previously Presented) A display method of making one pixel displayable in four colors, that is, three primary colors and a white color, and inputting and displaying chrominance signals corresponding to a mixing ratio of said four colors, comprising:

a color correction step of performing a first color correction of increasing the saturation of said chrominance signals and a second color correction of increasing a white color component of said chrominance signals, when a predetermined color component exists in said chrominance signals corresponding to said pixel;

a selection step of switching temporally a first chrominance signal obtained by said first color correction, and a second chrominance signal obtained by said second color correction, and selecting either; and

a display step of displaying the chrominance signal, which is selected, in said pixel.

23. (Previously Presented) A display method of making one pixel displayable in four colors, that is, three primary colors and a white color, and inputting chrominance signals corresponding to a mixing ratio of said four colors, and displaying them without decreasing the number of colors, comprising:

a color correction step of performing a first color correction of increasing saturation of said chrominance signals and a second color correction of increasing a white color component of

said chrominance signals, when a predetermined color component exists in said chrominance signals corresponding to said pixel;

a height generation step of giving, when there is a region where a plurality of pixels having said predetermined color component exist adjacently, at least height difference in saturation to said region by selecting either of said first chrominance signals and said second chrominance signals for every pixel of said region according to a predetermined pattern for selecting said first chrominance signals obtained by said first color correction, and said second chrominance signals obtained by said second color correction in turn for every one pixel or a plurality of adjacent pixels; and

a display step of displaying said region where at least the height difference in saturation is given.

24. (Cancelled)

25. (Currently Amended) A computer program product comprising a computer useable medium having readable program code means embodied therein for causing a computer to function as:

a color correction instrument which performs a first color correction of increasing saturation of a chrominance signal and a second color correction of increasing a white color component of said chrominance signal, when a predetermined color component exists in said chrominance signal corresponding to said a pixel; and

a height generation instrument which gives, when there is a region where a plurality of pixels having said predetermined color component exist adjacently, at least height difference in saturation to said region by selecting either of said first chrominance signals and said second chrominance signals for every pixel of said region according to a predetermined pattern for selecting said first chrominance signals obtained by said first color correction, and said second chrominance signals obtained by said second color correction in turn for every one pixel or a plurality of adjacent pixels, in a display apparatus, wherein

said display apparatus which makes said pixel displayable in four colors, that is, there primary colors and a white color, and inputs and displays said chrominance signal corresponding to a mixing ration of said four colors, and

said display apparatus comprises said color correction instrument, and a display instrument which displays the chrominance signal, which is selected by said color correction instrument, in said pixel.

26. (Previously Presented) A display apparatus which makes one pixel displayable in four colors, that is, three primary colors and a white color, and inputs and displays chrominance signals corresponding to a mixing ratio of said four colors, comprising:

color detection instrument which detects whether a predetermined color component is included in each chrominance signal corresponding to each pixel in a predetermined region;

color correction instrument which performs a first color correction of increasing the saturation of said chrominance signals and creating a first chrominance signal, and a second color correction of increasing a white color component of said chrominance signals and creating a second chrominance signal,

control instrument which performs the color correction of a chrominance signal, including said predetermined color component, by said color correction instrument, and performs control so that said first chrominance signal and said second chrominance signal may be displayed spatially in turn in every predetermined plural pixel units, which are horizontally and/or vertically adjacent, in said predetermined region; and

display instrument which displays said first chrominance signal, said second chrominance signal, or a chrominance signal, which is not given said color correction, in said pixel on the basis of said control instrument.

27. (Previously Presented) The display apparatus according to claim 26 wherein said every predetermined plural pixel units is every two pixel units.

28. (Previously Presented) The display apparatus according to claim 26, wherein in the case that said control instrument performs control so that said first chrominance signal and said second chrominance signal may be displayed spatially in turn in every predetermined plural pixel units, which are horizontally adjacent, in said predetermined region,

said control instrument switches and selects said first chrominance signal and said second chrominance signal in every said predetermined plurality of dot clock signals for determining display timing of every pixel in said predetermined region.

29. (Previously Presented) The display apparatus according to claim 26, wherein in the case that said control instrument performs control so that said first chrominance signal and said second chrominance signal may be displayed spatially in turn in every predetermined plural pixel unit, which are vertically adjacent, in said predetermined region,

said control instrument switches and selects said first chrominance signal and said second chrominance signal for every said predetermined plurality of horizontal periods in said predetermined region.

30. (Previously Presented) The display apparatus according to claim 26 wherein said control instrument performs control so that said first chrominance signal and said second chrominance signal may be displayed in a pixel of said predetermined region in turn temporally.

31. (Previously Presented) The display apparatus according to claim 26, wherein said control instrument performs control so that a chrominance signal which does not include said color component may be displayed without performing said color correction, and

performs control so as to be displayed in turn spatially, where it is assumed that all the chrominance signals displayed in a pixel of said predetermined region include said predetermined color component.

32. (Previously Presented) The display apparatus according to claim 26, wherein said predetermined color component is yellow, magenta, or cyan.

33. (Previously Presented) The display apparatus according to claim 26, wherein said three primary colors are red, green, and blue.

34. (Previously Presented) The display apparatus according to claim 26, wherein said chrominance signals are RGB signals.

35. (Previously Presented) The display apparatus according to claim 26, wherein, when said predetermined color component is yellow, said color correction instrument performs said first color correction by decreasing a value of a B signal of said chrominance signal and

performs said second color correction by increasing a value of the B signal of said chrominance signal, when a yellow color component exists in said chrominance signals corresponding to said pixel.

36. (Previously Presented) A display method using a display apparatus which makes one pixel displayable in four colors, that is, three primary colors and a white color, and inputs and displays chrominance signals corresponding to a mixing ratio of said four colors, comprising:

a color detection step of detecting whether a predetermined color component is included in each chrominance signal corresponding to each pixel in a predetermined region;

a color correction step of performing a first color correction of increasing the saturation of said chrominance signals and creating said first chrominance signal, and a second color correction of increasing a white color component of said chrominance signals and creating a second chrominance signal,

a control step of performing said color correction of a chrominance signal, including said predetermined color component, and performing control so that said first chrominance signal and said second chrominance signal may be displayed spatially in turn in every predetermined plural pixel units, which are horizontally and/or vertically adjacent, in said predetermined region; and

a display step of displaying said first chrominance signal, said second chrominance signal, or a chrominance signal which is not given said color correction, in said pixel on the basis of said control.

37. (Previously Presented) A computer program product comprising a computer useable medium having readable program code means embodied therein for causing a computer to execute:

a color detection step of detecting whether a predetermined color component is included in each chrominance signal corresponding to each pixel in a predetermined region;

a color correction step of performing a first color correction of increasing the saturation of said chrominance signals and creating a first chrominance signal, and a second

color correction of increasing a white color component of said chrominance signals and creating a second chrominance signal; and

a control step of performing said color correction of a chrominance signal, including said predetermined color component, and performing control so that said first chrominance signal and said second chrominance signal may be displayed spatially in turn in every predetermined plural pixel units, which are horizontally and/or vertically adjacent, in said predetermined region, of a display method wherein

said display method which makes said pixel displayable in four colors, that is three primary colors and a white color, and inputs and displays said chrominance signal corresponding to a mixing ration of said four colors, and

said display method comprises said color correction step, said control step and a display step.

38. (Previously Presented) A display apparatus which makes one pixel displayable in four colors, that is, three primary colors and a white color, and inputs and displays chrominance signals corresponding to a mixing ratio of said four colors, comprising:

color detection instrument which detects whether a predetermined color component is included in each chrominance signal corresponding to each pixel in a predetermined region;

color correction instrument which performs a first color correction of increasing the saturation of said chrominance signals and creating a first chrominance signal, and a second color correction of increasing a white color component of said chrominance signals and creating a second chrominance signal;

judgment instrument which judges whether a plurality of chrominance signals displayed in a pixel of said predetermined region fulfills a predetermined condition;

control instrument which performs the color correction of chrominance signals including said predetermined color component by said color correction instrument when not fulfilling said predetermined condition; and

display instrument which displays said first chrominance signal, said second chrominance signal, or a chrominance signal which is not given said color correction, in a pixel of said predetermined region on the basis of said control instrument.

39. (Previously Presented) The display apparatus according to claim 38, wherein said predetermined condition is a condition that chrominance signals including, said predetermined color component, are not displayed in two or more adjoining pixels spatially.

40. (Previously Presented) The display apparatus according to claim 38, wherein said predetermined condition is a condition that when a chrominance signal which does not include said color component is displayed without performing said color correction, and about the chrominance signals including said color component, said first chrominance signal and said second chrominance signal are displayed in turn spatially in a state that assumes that all the chrominance signals displayed in a pixel of said predetermined region include the predetermined color component and, either of an area where said first chrominance signal is displayed, and an area where said second chrominance signal is displayed is larger by 5% or more than the other.

41. (Previously Presented) The display apparatus according to claim 38, wherein said predetermined condition is a condition that, when a chrominance signal which does not include said color component is displayed without performing said color correction, and concerning a chrominance signals which include said color component, said first chrominance signal and said second chrominance signal are displayed in turn spatially in a state that assumes that all the chrominance signals displayed in a pixel of said predetermined region include the predetermined color component, either said first chrominance signal or said second chrominance signal is displayed except a chrominance signal which is not given said color correction.

42. (Previously Presented) The display apparatus according to claim 39, wherein, when said predetermined condition is not fulfilled, said control instrument performs control so that said first chrominance signal and said second chrominance signal may be displayed in turn spatially in every pixel unit or in every plural pixel units in said predetermined region.

43. (Previously Presented) The display apparatus according to claim 40, wherein, when said predetermined condition is not fulfilled, said control instrument performs control so

that said first chrominance signal and said second chrominance signal may be displayed in turn spatially in every pixel unit in said predetermined region in a state that assumes that all the chrominance signals displayed in a pixel of said predetermined region include the predetermined color component.

44. (Previously Presented) The display apparatus according to claim 41, wherein, when said predetermined condition is not fulfilled, said control instrument performs control so that said first chrominance signal and said second chrominance signal may be displayed in turn spatially in every pixel unit in said predetermined region in a state that assumes that all the chrominance signals displayed in a pixel of said predetermined region include the predetermined color component.

45. (Previously Presented) The display apparatus according to claim 43, wherein, when said predetermined condition is fulfilled, said control instrument performs control so that concerning a chrominance signal which does not include said color component, said control instrument does not perform said color correction, and concerning the chrominance signals which include said color component, said first chrominance signal and said second chrominance signal may be displayed in turn spatially in every plural pixel units in said predetermined region in a state that assumes that all the chrominance signals displayed in a pixel of said predetermined region include the predetermined color component.

46. (Previously Presented) The display apparatus according to claim 44, wherein, when said predetermined condition is fulfilled, said control instrument performs control so that concerning a chrominance signal which does not include said color component, said control instrument does not perform said color correction, and concerning the chrominance signals which include said color component, said first chrominance signal and said second chrominance signal may be displayed in turn spatially in every plural pixel units in said predetermined region in a state that assumes that all the chrominance signals displayed in a pixel of said predetermined region include the predetermined color component.

47. (Previously Presented) The display apparatus according to claim 42, wherein said control instrument has switching signal generating instrument which generates such a switching signal that said first chrominance signal and said second chrominance signal may be displayed in turn in every pixel unit or in every plural pixel units, and

wherein performing control so as to be displayed in turn spatially is selecting said first chrominance signal and said second chrominance signal in turn on the basis of said switching signal.

48. (Previously Presented) The display apparatus according to claim 43, wherein the control instrument has switching signal generating instrument which generates such a switching signal that said first chrominance signal and said second chrominance signal may be displayed in turn in every pixel unit, and

wherein performing control so as to be displayed in turn spatially is selecting said first chrominance signal and said second chrominance signal in turn on the basis of said switching signal, in a state that assumes that all the chrominance signals displayed in a pixel of said predetermined region include the predetermined color component.

49. (Previously Presented) The display apparatus according to claim 44, wherein the control instrument has switching signal generating instrument which generates such a switching signal that said first chrominance signal and said second chrominance signal may be displayed in turn in every pixel unit, and

wherein performing control so as to be displayed in turn spatially is selecting said first chrominance signal and said second chrominance signal in turn on the basis of said switching signal, in a state that assumes that all the chrominance signals displayed in a pixel of said predetermined region include the predetermined color component.

50. (Previously Presented) The display apparatus according to claim 45, wherein said control instrument has:

first switching signal generating instrument which generates a first switching signal so that said first chrominance signal and said second chrominance signal may be displayed in turn in every pixel unit in a pixel of a predetermined region;

second switching signal generating instrument which generates a second switching signal so that said first chrominance signal and said second chrominance signal may be displayed in turn in every plural pixel units in a pixel of a predetermined region; and

switching signal selection instrument which selects said first switching signal when said predetermined condition is not fulfilled, and selects said second switching signal when said predetermined condition is fulfilled, and

wherein performing control so as to be displayed in turn spatially is selecting said first chrominance signal and said second chrominance signal in turn on the basis of said first switching signal or said second switching signal, in a state that assumes that all the chrominance signals displayed in a pixel of said predetermined region include the predetermined color component.

51. (Previously Presented) The display apparatus according to claim 46, wherein said control instrument has:

first switching signal generating instrument which generates a first switching signal so that said first chrominance signal and said second chrominance signal may be displayed in turn in every pixel unit in a pixel of a predetermined region;

second switching signal generating instrument which generates a second switching signal so that said first chrominance signal and said second chrominance signal may be displayed in turn in every plural pixel units in a pixel of a predetermined region; and

switching signal selection instrument which selects said first switching signal when said predetermined condition is not fulfilled, and selects said second switching signal when said predetermined condition is fulfilled, and

wherein performing control so as to be displayed in turn spatially is selecting said first chrominance signal and said second chrominance signal in turn on the basis of said first switching signal or said second switching signal, in a state that assumes that all the chrominance signals displayed in a pixel of said predetermined region include the predetermined color component.

52. (Previously Presented) The display apparatus according to claim 47, wherein said switching signal is a signal using a signal which determines the timing of said display instrument which displays in said pixel.

53. (Previously Presented) The display apparatus according to claim 48, wherein said switching signal is a signal using a signal which determines the timing of said display instrument which displays in said pixel.

54. (Previously Presented) The display apparatus according to claim 49, wherein said switching signal is a signal using a signal which determines the timing of said display instrument which displays in said pixel.

55. (Previously Presented) The display apparatus according to claim 50, wherein said first switching signal and said second switching signal are signals using a signal which determines the timing of said display instrument which displays in said pixel.

56. (Previously Presented) The display apparatus according to claim 51, wherein said first switching signal and said second switching signal are signals using a signal which determines the timing of said display instrument which displays in said pixel.

57. (Previously Presented) The display apparatus according to claim 38, wherein said control instrument performs control so that said first chrominance signal and said second chrominance signal are displayed in a pixel of said predetermined region in turn temporally.

58. (Previously Presented) The display apparatus according to claim 38, wherein the color around said predetermined region is white.

59. (Previously Presented) The display apparatus according to claim 38, wherein said predetermined color component is yellow, magenta, or cyan.

60. (Previously Presented) The display apparatus according to claim 38, wherein said three primary colors are red, green, and blue.

61. (Previously Presented) The e display apparatus according to claim 38, wherein said chrominance signals are RGB signals.

62. (Previously Presented) The display apparatus according to claim 61, wherein said predetermined color component is yellow; and

wherein said color correction instrument performs said first color correction by decreasing a value of a B signal of said chrominance signals, and performs said second color correction by increasing a value of the B signal of said chrominance signals.

63. (Previously Presented) A display method using a display apparatus which makes one pixel displayable in four colors, that is, three primary colors and a white color, and inputs and displays chrominance signals corresponding to a mixing ratio of said four colors, comprising:

a color detection step of detecting whether a predetermined color component is included in each chrominance signal corresponding to each pixel in a predetermined region;

a color correction step of performing a first color correction of increasing the saturation of said chrominance signals and creating a first chrominance signal, and a second color correction of increasing a white color component of said chrominance signals and creating a second chrominance signal;

a judgment step of judging whether a plurality of chrominance signals displayed in a pixel of said predetermined region fulfill a predetermined condition;

a control step of performing control so as to perform the color correction of chrominance signals including said predetermined color component when not fulfilling said predetermined condition; and

a display step of displaying said first chrominance signal, said second chrominance signal, or a chrominance signal which is not given said color correction, in a pixel of said predetermined region on the basis of said control.

64. (Cancelled)

65. (Previously Presented) A display apparatus which makes one pixel displayable in four colors, that is, three primary colors and a white color, and inputs and displays chrominance signals corresponding to a mixing ratio of said four colors, comprising:

color detection instrument which detects whether a predetermined color component is included in each chrominance signal corresponding to each pixel in a predetermined region;

judgment instrument which judges whether a plurality of chrominance signals displayed in a pixel of said predetermined region fulfill a predetermined condition;

color correction instrument which performs the first color correction of increasing the saturation of said predetermined chrominance component of said chrominance signals and creating a first chrominance signal, and the second color correction of increasing a white color component of said chrominance signals and creating a second chrominance signal;

switching signal generating instrument which generates such a switching signal that said first chrominance signal and said second chrominance signal may be displayed in turn in every one or in plural pixel units, in a state that assumes that all the chrominance signals displayed on a pixel of said predetermined region include said predetermined color component;

first selection instrument which selects said first chrominance signal or said second chrominance signal in turn on the basis of said switching signal, in a state that assumes that all the chrominance signals displayed on a pixel of said predetermined region include the predetermined color component;

second selection instrument which selects said first chrominance signal or said second chrominance signal when said predetermined color component is included and said predetermined condition is not fulfilled, and otherwise selects a chrominance signal which is not given said color correction; and

display instrument which displays said first chrominance signal, said second chrominance signal, or a chrominance signal not given said color correction, which is selected by said first selection instrument and said second selection instrument, in a pixel of said predetermined region.

66. (Previously Presented) A display apparatus which makes one pixel displayable in four colors, that is, three primary colors and a white color, and inputs and displays chrominance signals corresponding to a mixing ratio of said four colors, comprising:

color detection instrument which detects whether a predetermined color component is included in each chrominance signal corresponding to each pixel in a predetermined region;

judgment instrument which judges whether a plurality of chrominance signals displayed in a pixel of said predetermined region fulfill a predetermined condition;

color correction instrument which performs a first color correction of increasing the saturation of said predetermined chrominance component of said chrominance signals and creating a first chrominance signal, and a second color correction of increasing a white color component of said chrominance signals and creating a second chrominance signal;

first switching signal generating instrument which generates a first switching signal so that said first chrominance signal and said second chrominance signal may be displayed in turn in every pixel unit, in a state that assumes that all the chrominance signals displayed on a pixel of said predetermined region include said predetermined color component;

second switching signal generating instrument which generates a second switching signal so that said first chrominance signal and said second chrominance signal may be displayed in turn in every plural pixel units, in a state that assumes that all the chrominance signals displayed on a pixel of said predetermined region include said predetermined color component;

switching signal selection instrument which selects said first switching signal when said predetermined condition is not fulfilled, and selects said second switching signal when said predetermined condition is fulfilled;

first selection instrument which selects said first chrominance signal or said second chrominance signal on the basis of said first switching signal or said second switching signal which is selected by said switching signal selection instrument;

second selection instrument which selects said first chrominance signal or said second chrominance signal, which is selected by said first selection instrument, when said predetermined color component is included, and selects a chrominance signal, which is not given said color correction, when said predetermined color component is not included; and

display instrument which displays said first chrominance signal, said second chrominance signal, or a chrominance signal not given said color correction, which is selected by said first selection instrument and said second selection instrument, in a pixel of the predetermined region.